THE VETERINARY RECORD

A Weekly Journal for the Profession.

No. 1112. OCTOBER 30, 1909 Vol. XXII

The Next International Veterinary Congress.

Mr. Banham's account of the week of excursions in Holland which followed the official week of the Hague Veterinary Congress has a bearing quite apart from its interesting survey of the agricultural conditions of one of the most progressive countries in Europe It can scarcely be read without wondering how the small and scattered body of veterinarians in the British Islands—a body scantily supplied with funds, and but little accustomed to act in concert—will succeed in arranging the next Congress. No responsibility of the sort has ever been cast upon the profession in England. The Congress four years hence is practically certain to be the largest veterinary gathering ever held, and if it is to be successful, considerable financial support will be necessary.

These Congresses are financed from two sources—the regular subscriptions of members, and voluntary contributions from authorities, societies, and private persons. The membership subscription is small; and this, while it places one method of supporting the Congress within the reach of every practitioner, increases the need for additional voluntary contribution. Again, it it undeniable that the veterinary profession receives less public recognition in England than in many European countries; and it is probable, therefore, that the English Congress may receive less—perhaps much less—outside support than previous ones abroad have done. Finally it has to be remembered that the arrangements for any such gathering are necessarily made long beforehand. The main arrangements for the Congress of 1913 will be completed at least a year before the Congress is held. Those arrangements are now in the hands of an organising committee, but the profession can begin to co-operate in the collection of funds at once, and should do so.

Probably the Institution of a central fund under influential management would be the best course, and we bope soon to see such a fund established. But in the meantime, any veterinaary society may make an independent commencement. Very few of our professional associations can definitely pledge themselves to subscribe a fixed sum annually to any object. But every association can at once set aside a sum—however small—for the benefit of the Congress, add to that from time to time as circumstances permit, and encourage its members to make individual voluntary subscriptions. Each Society could do this independently without fear of rivalry or friction between different funds, as all the money, however and wherever collected, would pass into the hands of the Organising Committee of the Congress, who would direct its disposal. It is only by such general co-operative support from the various centres of the profession that a sum adequate for the objects of the Congress will be raised.

Veterinary surgeons generally in these islands, for four years to come, may regard the next International Veterinary Congress very much as the members of a local veterinary society, for one year, regard an impending visit of the "National" to their district. Next summer the members of the Central Society will be the hosts of the "National," and we all know what will happen. Something will be set aside from the funds of the Central Society itself, something more will be added by the individual subscriptions of its members, and so the amount necessary for the entertainment of the "National" will be found.

The sum required for an international gathering is far larger, but the time at our disposal is longer, and the whole profession, not the members of one society alone, are called upon to subscribe. If we can think nationally as well as locally—applying a national public spirit to the forthcoming Congress as we habitually apply a local one to the meetings of our largest association, we shall be able to do all that is necessary.

TUBERCULAR PERICARDITIS IN A DOG.

By E. Wallis Hoare, F.R.C.V.S.

Subject.—A small sized cocker spaniel dog, aged six years.

History.—On Oct. 11th the animal was sent to the infirmary for treatment, with a history of loss of appetite for a few days, and an enlarged condition of the abdomen. Enquiry elicited the information that for about two months the dog had been gradually losing condition, and suffered from a cough occasionally.

The symptoms observed were:—Emaciation, anæmia, a rapid, weak, irregular pulse, accelerated respirations, well-marked ascites, temp. 101·5°. Examination of the cardiac region gave a very much increased area of cardiac dullness on percussion. On palpation, it was not possible to detect the cardiac impulse. On auscultation, the heart sounds could not be detected, even with the stethoscope, and the impulse was faint, very quick, and weak.

Percussion of the chest on the left side gave evidences of marked dullness and tenderness, and auscultation showed an absence of respiratory sounds at the lower two-thirds of the thorax. On the right side, nothing abnormal could be detected.

An attempt was made with a trocar and canula to withdraw some of the fluid from the abdominal cavity, but this was not successful.

The dog was kept under observation until Oct. 16, during which time he fed well, but the respiratory distress became more marked, and each expiration was accompanied by a slight moan, but no cough was observed.

As the prognosis was unfavourable the owner decided to have the animal destroyed with chloroform.

Autopsy.—The abdominal cavity contained a a fairly large amount of ascitic fluid. The liver was congested and enlarged.

On opening the thoracic cavity, a peculiar spectacle was presented. The pericardium was so enormously distended with fluid that it almost filled the cavity, pushing the lungs in an upward direction. There were firm and extensive adhesions of the pericardium to the diaphragm and to the left side of the chest, and in the latter region there were abundant evidences of pleuritic lesions. A fairly large amount of effusion of a turbid character was present in the left side of the thorax.

I forwarded the pericardium, heart, and lungs intact to Prof. Mettam, Royal Veterinary College of Ireland, who kindly examined them and sent the accompanying photos, and report as follows:

"The thoracic viscera of a cocker spaniel were received from Mr. Hoare, the pericardium highly distended with fluid being intact.

The left lung showed a pleurisy and remains of adhesions. In the lung a cavity apparently containing fluid could be detected on palpation, and around this was consolidation due to pneumonia. On cutting into the lung much fluid escaped from a vomica, and examination of the fluid, and especially scrapings from the wall of the cavity showed a few tubercle bacilli. Bacilli were also found in smears made from the pleura.

The pericardium was enormously distended with fluid, and there were early lesions on the pleural surface of the pericardium. The sac was tapped and twenty-three fluid ounces (670 c.c.) of fluid escaped. It was slightly yellow, turbid, and contained flocculi. Some of the fluid was centrifugalised and the precipitate examined; tubercle bacilli, though not numerous, were readily found.

Tubercles, greyish in colour, were found plentifully scattered over the heart, especially towards its base, and upon the serous lining of the pericardial sac where reflected from off the heart on to the pericardium.

The lymphatic glands examined gave no naked eye evidence of tuberculous infiltration. From the appearance of the organs I think that the pericarditis was secondary to the lung and pleural lesions."

One photograph shows the unopened distended pericardium; the other the pericardium opened, the heart shown covered with small tubercles. Same focus, same magnification.

Remarks.—The above case shows the latent character of this disease in some instances. It was not until a few days prior to being destroyed that any serious symptoms apparent to an ordinary observer were present. Even then the symptoms presented were by no means proportionate to the extent of the lesions.

A regards diagnosis, I may say that I diagnosed pericarditis, with only a suspicion of tuberculosis. The owner suggested "consumption," but this is a very favourite diagnosis amongst the laity at present, since tuberculosis has been explained to them. It now takes the place of rabies amongst dog owners.

Tumour in the Umbilical Region.

Subject.—A two-year-old gelding.

History.—An enlargement appeared in the umbilical region at about six months of age; at times got smaller, then again increased in size. The owner thought it was a case of umbilical hernia, and sent the animal in from the country for treatment.

On examination the tumour was very hard, and about the size of a closed fist.

Operation.—The animal was cast and chloroformed, and fixed on his back. The skin was shaved and disinfected over the area of operation, and a sterilized towel, wrung out of carbolic solution, placed around the part. A median incision was made over the tumour, and the latter was carefully dissected out.

It was found to extend down to the umbilical ring and was attached to the remains of the umbilical cord. In its centre was a pus cavity containing a fair amount of pus, the tumour somewhat resembling a "collar tumour." On deep dissection the umbilical ring was exposed, and was found not to have closed; the peritoneal covering was not injured by the knife, but in order to prevent the occurrence of a hernia, three sutures of sterilized Chinese twist were inserted and the ring closed. The skin wound was next sutured. A moderate amount of swelling followed the operation, but the case did well and recovery ensued.

The tumour resembled in shape a small bird's nest, the opening in the latter being represented by the pus cavity in the tumour. On examination by Prof. Craig, no botriomyces were found.

WORLDS STILL TO CONQUER.

Science in these days rides a high horse. If it were human we might say it suffers from swelled head. Sermons and pamphlets, newspaper articles and even the man at the street corner are lauding it to the skies. What has science not achieved? The telephone, telegraph, wireless messages, Röntgen rays, radium, steam turbines, motor cars, and aeroplanes all bid us stand and wonder. Modern life, truly, is not the life our fathers lived, and we ought to be thankful to science for ransacking the universe for our pleasure and for taming the powers of the air to our service.

But there is another side to the shield. Modern science has done great things. It hurls us from

place to place with the speed of lightning, more or less. Wherever we may be it can send us messages, whether we like it or not. It has hurried and worried us; it has driven us and excited us into a fever which is ever at fever-point; it has huddled us together in towns where there is scarce breathing space, and has not yet succeeded in bringing the air to us; it has made us more comfortable in our every-day life, relieving us of exertions and laying luxuries around us, but it has robbed us of romance.

So far, though modern science has been our benefactor, it has demanded its toll and we have paid it.

But in the glamour of its achievement we forget that the universe is not founded by the telephone and the steam engine. Modern science has affected our actual living life, so to speak, much less than we are apt to imagine. In eating, drinking, sleeping, love-making, quarrelling—we differ but little from our ancestors of many centuries past. Look at the wonders of astronomy, says the disciple. Galileo declared the modern scientific basis of the solar system; Newton announced the law of gravitation. Since then how meagre have been the results in astronomy! To discover a planet, and name it, is not an achievement which has any striking importance for humanity at large. Similarly, is the discovery of helium in the sun or radium in a railway tunnel of any positive value to anyone? Modern science has a knack of declaring some truth with an impressive solemnity; but the really interesting facts it leaves to conjecture. What would we give to know if Mars is really inhabited, and if there were at one time great peoples on the moon? Those would be of interest and importance, but modern science chooses to be silent, or speaks in halting conjectures.

If we come to our own earth we find that there are many little things which either baffle science or are ignored by scientists. As civilisation advances we need more and more to have huge buildings, either for industries or for residence. Yet so ordinary a luxury as ventilation seems to be outside the skill of the scientist. He can fit up pretty buttons with bells and indicators; he can arrange wonderful lights, making the night to rival the day. These are the fruits of electrical study and research, and herein modern science glories. But the provision of fresh air in our churches, amusement halls, nay, even in our humble dwelling places, seems to be outside human skill. Draught in winter and stifling heat in summer seem inseparable from all our public buildings, and even from the cars which, like some flying carpet, transport us from place to place. Consequently our streets are packed with pallid faces, and illnesses are developed which counteract largely the good influence of surgical and medical advance.

Even in lowlier ways, science has shortcomings. Is there anything more clumsy than a boot? These are leather—occasionally—and nails. The twentieth century can hit on no better system of dealing with boot soles and heels than the primitive system of knocking in nails. The Roman soldier of the Legion and the policeman of to-day have almost precisely the same foot-wear, and clumsy foot-wear it is, knowing but little of the shape and comfort of the foot. The same applies to umbrellas, surely the most insane instrument ever invented. The most fashionable umbrella that the late Prof. Blackie of Edinburgh ever verified over is but little variant from the gingham of Queen Anne's day. Our hats, male, are triumphs of discomfort; our hats, female, are triumphs of feminine cruelty. Neither is a suitable headgear, and the only advantage of the woman's is that it changes like the chameleon.

These are types only. The list might be vastly extended, for modern science has done little for our clothing. Can it be said to have done much for our eating? Is canned "Chicago" an improvement on the mighty sirloin of our ancestors, or the "faked" butter and doctored milk better than those of the wild Caledonians?

One would have expected, and with some reason, that since the modern science of chemistry has advanced by leaps and bounds it would have been possible to invent a scientific food and a scientific succession of meals.

It is not the scientist who makes exaggerated claims for science. In his own lowly fashion he is so much impressed by the vastness of the unknown land that he cannot be vain or boastful in respect to the area of the known. There is a cheap oratory in the air to-day which constantly and without intermission tells us of the wonders of advanced science, as if everything were achieved. Perhaps if we take a calm survey of the territory which science has scarcely touched, it may correct our ideals, even after reading Dr. Bradley's splendid address on the commercial value of science. It will not reduce our respect for the wonders of the day to realise that there are still worlds to be conquered.

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ABSTRACTS FROM FOREIGN JOURNALS

Follicular Mange.

Prof. Friedrich Gmeiner has published (*Berliner Tierärzliche Wochenschrift*) an account of his long and extensive researches upon the *Demodex folliculorum* of men and dogs. This article is only a summary of two previous works in monograph form by the same author (one dealing with the parasite itself, the other with the disease it produces), but is nevertheless too long for complete reproduction. Its main features are as follows:

After a condensed description of the demodex, Gmeiner refers to the hitherto very debateable question of the frequence of *D. folliculorum hominis* in man. Systematic investigations on this point, embracing the frequence of the parasite, the age and sex of the human beings most commonly affected, and the parts of the body most favoured by the parasite, are still lacking; and the author's obser-

vations are therefore valuable. He has examined the eyelids (a common seat of the acari in man) and faces of 200 human corpses, irrespective of age and sex; and he finds the parasite so nearly constant in its presence as to justify the conclusion that it is always present in human beings, with the exception of the newly born. In one series of 100 consecutively examined corpses, for instance, the parasite was found in 97. Two of the three cases in which it was not found were infants a few days old, where it would not be expected; the third was a girl of nine years, in whom it is possible that the acarus existed and was not discovered. On the other hand, Gmeiner has found the parasite in infants only a few weeks old, and has also found it in all the persons over ten years old that he has examined.

The most important part of Gmeiner's work, however, is that relating to the pathology of canine follicular mange. He has microscopically examined many sections of skin affected with follicular mange, and finds considerable variation in the histological appearances, according to the clinical stage of the disease. In the so-called squamous form of follicular mange, a striking fact is that while the hair follicles and sebaceous glands are filled and generally considerably distended with acari, ova, and larvæ in all stages of development, together with epithelial *débris*, yet the surrounding tissues are as a rule quite devoid of inflammatory reaction. In exceptional cases only, vascular dilatation and cellular infiltration exist, and this probably preludes the pustular form of the disease.

Histological examination of sections of skin clinically affected with the pustular form of follicular mange reveals an extensive severe inflammation of the skin, with perivascular, peri-follicular, and periglandular infiltrations of round cells, stellate connective tissue corpuscles, and poly-nuclear leucocytes as the chief feature. Extensive cutaneous suppuration and abscess formation follows, but contrary to the previous assertion of Krulikowsky, Gmeiner finds that it is very rare for the acari themselves to leave their original resting places in the follicles and glands and migrate into the tissues at any stage of the disease.

One constant and, according to Gmeiner, all-important accompaniment of the pustular form of the disease is the presence of staphylococci, which are found in masses in the follicles and glands with the acari, and are also present in the contents of the cutaneous abscesses. They are, in fact, the ætiological factor in inducing the infiltration and suppuration, and experimentally they are found to be culturally, biologically, and pathogenically identical with *Staphylococcus pyogenes albus*. So constantly are these cocci found in the pustular form of the disease, and so invariably do they belong to the same species, that Gmeiner confidently asserts *Staphylococcus pyogenes albus* to be the real pathological factor in canine follicular mange. According to him, the acari play merely an intermediate *rôle*. Their direct effect is seen at its height in the squamous form of the disease; but they only pave the way for the pustular form. By dilating the follicles and glands, they facilitate the entry of the staphylococci into these; by causing minute lesions of the follicular and glandular epithelium, they also facilitate the penetration of the cocci into the tissues. But the pustular folliculitis and perifolliculitis are occasioned solely by the *Staphylococcus pyogenes albus*, which is not only present beside the acari in the follicles and glands, but also penetrates from thence into the tissues. The blood stream may also be invaded by the staphylococcus and its toxins, and dogs dying from follicular mange generally die thus from sepsis.

Follicular mange in dogs should therefore be regarded as a staphylococcal infection, which is made possible by previous invasion of the follicles and glands by acari.

Gmeiner suggests that the acari may similarly act as pioneers of infection in the human subject, and induce pustular inflammation of the meibomian glands and other forms of meibomitis. The parasites are not pathogenic upon the human skin, where they exercise almost no effect.

As regards diagnosis, Gmeiner has nothing new to advance upon the clinical appearances of the disease. He insists upon the necessity of microscopic examination, maintaining that many diseases are wrongly regarded as mange on clinical appearances alone.

As regards treatment, Gmeiner's work is very interesting. He considers the *rôle* of the demodices in the production of the disease as very important, although subsidiary; and has therefore made very extensive experiments upon the acaricidal power of many drugs, by observing their action upon isolated living acari under the microscope. Over 200 drugs were tested in this manner upon *Demodex canis* and *Demodex hominis*, the results being about the same in both species. A great variety of agents which have long enjoyed clinical reputations as acaricides —as styrax, balsam of Peru, the benzol and toluol derivatives, etc.—have thus been experimentally proved to be quickly lethal to demodices. Metallic preparations, especially mercurial ointments, were found somewhat inferior; and preparations of sulphur, were still less efficacious. On the other hand, the halogens, especially preparations of iodine, were found to have considerable anti-parasitic effect.

A much less generally known class of acaricides are the ethereal oils, which Gmeiner highly recommends on account of their antiparasitic action (even in weak proportions in liniments or ointments), non-toxicity, and, in many cases, freedom from irritant effect. Gmeiner names several of which he has proved the excellence, but he especially prefers ol. carui, which he uses in treating follicular mange after his own method.

That method is considerably influenced by Gmeiner's pathological conception of the disease. He insists upon the importance, in the early stages, of using only those acaricides which will not damage the superficial layers of the skin, and thus facilitate staphylococcal infection. Violent rubbing in of any agents, especially of irritating ones, is to

be avoided. Gmeiner's own procedure is as folt lows: The hairs in and around the affected par- are cut off, and the dog is bathed in a solution of from ½ to 1 per cent. of sulphurated potash. A mixture of 5 parts each of ol. carui and spirit with 75 parts of ol. ricini is then applied to the affected parts. This is rubbed in with the finger gently but at the same time thoroughly, at least three minutes rubbing being given to each affected piece of skin in order that the ethereal oil may penetrate as deeply as possible. Generally the liniment is ap plied once daily, and a ½ per cent. sulphurated potash bath is given every eight days.

Gmeiner highly recommends this treatment after three years experience of it. He lays stress upon the fact that he has been able to keep most of his successful cases under observation for months and even years after treatment, thus satisfying himself that the recoveries were permanent. Nevertheless, he fully admits that the prospects of success vary with the form and extent of the disease. In its early stages he has been uniformly successful. Slight localised squamous lesions are cured in a few weeks, and even much more extensively affec- ted cases of the squamous form of the disease are regularly brought to permanent recovery by careful and persevering treatment. The pustular form is less amenable to treatment, but even this, if not too extensive can be successfully dealt with. Here it is essential to open all pustules and carefully press out their contents before applying the treatment. In very extensive cases of the pustular form of the disease, when thickening of the skin is already present, Gmeiner expressly says that his treatment must not be expected to succeed.

W. R. C.

OUR HORSE SUPPLY.

By Lieut.-Col. A. F. APPLETON, A.V.C.

Presented at the meeting of the National Veterinary Association, at Harrogate, July, 1909.

Mr. President and Gentlemen,—I feel that I must start my paper by apologising for ever undertaking to write one on such an important subject with my limited experience, and the short time at my disposal to collect facts and statistics. There is no doubt that in looking to the future, the question of our horse supply is a very serious one indeed. Horse breeding has undoubtedly declined in England of late years, and the reasons are, I think, not far to seek.

In the first place, farmers are not as prosperous as they were 30 years ago; at that time most well to do farmers bred hunters, and hunted regularly, while their sons joined the yeomanry and brought their own horses. Now one meets a very limited number of this class in the hunting field, and the yeomanry in most parts of the country consists principally of clerks, various city men, miners, and a small proportion of yeomen. Only last month the Colonel of a Yeomanry Regiment told me that when he joined the regiment each man brought his own horse, but that now only 10 per cent. did so. We may take it, then, that the average farmer no longer breeds this class of horse.

Secondly, the competition of motor cars and mechanical transport has given a serious check to horse-breeding, not so much from the falling off in the demand for horses, but from the uncertainty of the future.

There is no doubt that mechanical means of locomotion has to a very great extent replaced the common bred £20 to £30 horse, but I doubt very much if it has replaced to any great extent the better class of horse. Take the hunter for instance, excluding the farmer class, there are undoubtedly more hunting men now than there ever have been, and the price of a good hunter has never been so high as it is now, in fact everything points to the demand being already greater than the supply. The same may be said of all high class horses as regards prices. Many people anticipated that the lighter bred carriage horse was doomed by the motor car, yet I am informed that at the present moment London carriage builders have more demands for light victorias than they can possibly supply; probably ladies are realising that motors do not show them off to the best advantage. The motor scare therefore that did so much harm to horse-breeding was quite unjustified.

Thirdly, I think that although the South African war put a lot of money into the breeders' pockets, the prices offered tempted them to part with many useful mares that would otherwise have been retained for breeding purposes, and which have since been difficult to replace. One reason that I have frequently heard given for the decline of horse-breeding in this country is, that so many of our best mares are purchased by foreigners. This undoubtedly is so, but whether it injures our horse-breeding or not is another question: if the foreigner can give better prices than we can, so much the better for the breeder. If the breeder wants protecting against himself, then by all means put an export tax on mares, but let the proceeds be used for the benefit of horse-breeding. If the tax stops the exportation, then the breeder loses a good customer, if it does not, then the country must benefit.

As the hunter is getting scarce, so is the troop horse, and the trade is practically all in the hands of dealers. A few years ago farmers petitioned Government to buy direct from them, and do away with the middle man. They complained that dealers gave them £25 for horses which were immediately purchased for troopers at £40. What was the result? Remount officers visited farms all over the country, but in the great majority of cases were shown only common underbred hackneys and cart horses, a class quite unsuitable for army purposes. Any suitable horses that they came across either the dealer had a lien on, or they were beyond army prices. Large bills for travelling expenses were incurred, but very few horses purchased. The system of collecting horses in centres for the remount officer to see also failed: the dealer had evidently made his selection first. The only conclusion one can come to is that the farmer cannot afford to keep his young stock until they are four years old, and has to fall back on the dealer for ready cash: the latter naturally advances money on the most market- able animals, and eventually gets them at a price that cannot possibly leave the farmer any profit. It would be of enormous assistance to breeders if they could sell at three years old instead of four; but as far as remounts are concerned, the cost of keeping them for a year with all the attendant risks, and upkeep of a large establish- ment, would raise the price as a four-year-old from £40 to something nearer £60.

There is no doubt that the breeder must breed for the market. He must specialise, and breed the best class of the type he selects, be they thoroughbreds, hunters, hackneys, shires, or polo ponies. He has got too much into the habit of breeding from what he has got, and not what we want. There is no room for the nondescript horse in these days. They are not even a necessity on the farm, for where the land is light the hunter class are quite able to do all the work required, and where heavy, so is the shire horse. As far as I have been able to ascertain there is no falling off in the supply of well bred heavy horses, and prices are good; it is with the

hunter class that the falling off is taking place, and where our chief anxiety is for the future. And the question of the moment is, how are we going to get the breeder, particularly the small breeder, to take them up again? To be successful he must be a good judge of this class of horse, have a suitable farm, and a certain amount of capital. It is not every man that is a good judge of a hunter, but those that are not, and even those that are, can always obtain valuable advice and assistance from those two splendid societies, the Hunters Improvement, and Brood Mare. As regards the farm, the principle requirements are light soil, good grazing and water supply; on such land the stock are able to do all or most of the farm work and pay for their keep.

The "certain amount of capital" is the present day stumbling block, for there is no doubt the average farmer has not got it. How is he to get over this difficulty? Assistance in some form or another must come from Government if the supply of remounts is to be maintained, and all sorts of suggestions have been brought forward as to the manner in which this assistance should be given. One is that an export duty should be put on mares, the proceeds to be used in purchasing stallions to be placed at various centres in suitable parts of the country for free use of approved mares.

A second is to place Government stallions at the kennels in charge of masters of hounds in those parts of the country suitable for the breeding of the hunter class, to cover approved mares free of charge. The Government to give a £5 premium to every mare when the foal is born and have the option of purchasing it as a four-year-old for a further sum of £35, or if suitable for a charger, £45. The breeder, if he considers his horse of greater value than this, to have the option of purchasing it from the Government for £25.

A third is to supply stallions as above, the funds to be raised by an export duty on mares. To advance £5 on every foal born, and another £5 on the second and third years, provided the foal remains suitable, and a balance of £25 to complete the purchase on completion of the fourth year. The breeder always to have the option of returning the money advanced and paying £20 for the use of the stallion. The breeder to take all risks in matters of soundness, and the Government as regards suitability.

These schemes are very imperfect, but I think worthy of discussion.

Surely the time has arrived for the whole question of our horse supply to be taken up in a thoroughly practical manner by Government.

I am aware that a census of country horses has been taken, but why the country and not the towns? Surely we shall get as useful information from a town census as a country one, and one is very incomplete without the other. It cannot be because the town one is difficult to obtain, for I have before me now not only the horse census but also a list of mechanical transport of the city of Hull, with the owners names and addresses. This was compiled for me in about a week by the Chief Constable of that city for military purposes, and I have no doubt that the Chief Constables of Bradford, Leeds, Manchester, and any other big towns could do the same.

I learn from this census that the horse population of the City of Hull is 2150. I have now only to ascertain from the various knackers the number of horses killed or disposed of by them during the year, to be able to make a pretty correct estimate of the yearly wastage and requirements of that city. Such a census may indeed be made practical use of in many ways.

I am afraid that since our South African experience, too much reliance is being placed on the importation of foreign horses to supply us in our hour of need, but such favourable conditions are not likely to occur again, and it is quite time we put our house in order.

Discussion.

Mr. R. Brydon: I have read Col. Appleton's paper, and while there is much in it that I agree with, there is also much on which I take an entirely different view. If you will allow me I will just go through the paper and speak about it in detail.

In the second paragraph he says, "In the first place, farmers are not as prosperous as they were thirty years ago; at that time most well-to-do farmers bred hunters, and hunted regularly, while their sons joined the yeomanry and brought their own horses." Then he goes on to say that very few of that class are now met with in the hunting field, and that most of the yeomanry have to be provided with horses. It is perfectly true that farmers are not perhaps so prosperous as they were in the seventies. At that time wheat was ranging from 50/- to 80/- per quarter, and they did not breed horses then because it was a paying pursuit, but because they could afford to do so, and if they brought up a horse and got some hunting out of it, and they kept on breeding a few, it was not so much because it was a paying concern, as because it gave them an interest in their work, and as other things were profitable they were quite able to do that.

He goes on to say, "One reason that I have frequently heard given for the decline of horse-breeding in this country is, that so many of our best mares are purchased by foreigners. This undoubtedly is so, but whether it injures our horse-breeding or not is another question; if the foreigner can give better prices than we can, so much the better for the breeder. If the breeder wants protecting against himself, then by all means put an export tax on mares, but let the proceeds be used for the benefit of horse-breeding." Now to begin with, whatever the cause may be I am certain it is not the scarcity of mares. There are plenty of good mares in the country and if it were worth while to breed remounts, which I must say it is not at the price they get for them, plenty of remounts would be produced. If by any means a profitable market could be ensured the remounts would be forthcoming, and we would not need to go out of the country to seek the markets or seek the capital or anything else. The farmers would very quickly cater for the market if the market was there. Then again he refers to an export tax on mares, and I entirely disagree with that; I do not think that would do any good at all. He goes on to say "A few years ago farmers petitioned Government to buy direct from them, and do away with the middle man." I think if that could be done it would be of considerable advantage, but it seems to me it would be very difficult to organise unless there was some agent appointed in each district on behalf of the Government to look after the horses in that district. Then perhaps something might be done in that way.

Later on in the paper he says, "The 'certain amount of capital' is the present day stumbling block, for there is no doubt the average farmer has not got it. How is he to get over this difficulty? Assistance in some form or other must come from Government if the supply of remounts is to be maintained, and all sorts of suggestions have been brought forward as to the manner in which this assistance should be given. One is that an export duty should be put on mares, the proceeds to be used in purchasing stallions to be placed at various centres in suitable parts of the country for free use of approved mares." Now, gentlemen, I think there is something in what he says about stallions being placed in various parts of the country. I am quite certain that we have not sufficient stallions within the reach of farmers. The Italian system I believe is a very good one. There the Government have large depôts of stallions of all kinds, and these they keep all together in these depots during the winter season, and later on when

the covering season comes on, these horses are sent out to certain centres in every horse-breeding district in the country, so that practically all the breeders in Italy are within reach of the Government stallions. Col. Appleton goes on to say: "A second plan is to place Government stallions at the kennels in charge of masters of hounds in those parts of the country suitable for the breeding of the hunter class, to cover approved mares free of charge. The Government to give a £5 premium to every mare when the foal is born and have the option of purchasing it as a four-year-old for a further sum of £35, or if suitable for a charger, £45. The breeder, if he considers his horse of greater value than this, to have the option of purchasing it from the Government for £25." Personally I entirely disagree with all that. I do not think it would do the slightest good to give doles of that kind to tenant farmers. (Hear, hear.) It would only pauperise them in a manner, and the class of men that would receive doles of that kind are not the class of men that would go into horse-breeding to make it a successful venture. (Hear, hear.) He continues: "A third is to supply stallions as above, the funds to be raised by an export duty on mares. To advance £5 on every foal born, and another £5 on the second and third years, provided the foal remains suitable, and a balance of £25 to complete the purchase on completion of the fourth year. The breeder always to have the option of returning the money advanced and paying £20 for the use of the stallion. The breeder to take all risks in matters of soundness, and the Government as regards suitability." I think that also is a very clumsy suggestion, and one that would not meet the object in view. The real fact of the matter is that it will not pay any man living, I do not care how careful he is, to breed horses and sell them to the Government at four years old at £40.

How can he do it? If you look at it for a moment, supposing a farmer has a mare and he uses that mare for going to Kirk and market, and for doing light jobs about the place, and he puts her to a Government stallion, it will cost him about two guineas, or £2 5s. with the groom's fee. Then for about six months, two months before she foals and four months afterwards, he would not have any use of that mare at all, or a very limited use, and the loss to him on that account would be something like £5 for six months. By that time the foal may be four months old and he would have that foal to keep another eight months before it was a yearling. As everyone connected with horses knows, the first year is the most expensive of all. If a youngster is not fed well with corn and hay and roots and carefully looked after during the first year it loses its growth and never recovers it. To keep that foal decently for eight months would cost at least £8, £1 a month. After that there is another three years in which he has to be kept, and I think the least he could put down for keeping that horse for three years would be £9 a year, which would be £27 for three years. With the £8 and the £4 and the £2 that would make altogether something like £41 as the bare cost, without taking into consideration incidentals for breaking and shoeing and other things. For that expenditure of £41 the Government very generously offer £40 if they like the horse, and if they do not like it—well, they do not like it. All these doles which are foreshadowed in this paper, even if they got them all and the Government liked the horse at the finish, would only amount to £40 after all. You may take it from me, and from anyone who has considered the subject, that there are no men who can breed horses commercially and make the business pay in this country if they are only to get £40 for them at four years old. If the Government would take them at three years old and give £40, the case would be vastly improved; there would be a little profit—not very much, but still a little. If they were then sent into a depot and trained for a year they would get them in the end at something like £50 or £60. I think they would be better in the hands of the Government for the last year rather than being left with the farmer; they would get better training and be more carefully looked after, and there is no doubt that they would be more ready for their work by the time they were wanted.

Now contrast for a moment the difference between breeding those remounts and breeding ordinary heavy horses. I have had a good deal to do with breeding Clydesdales and other horses, and I find we have had sales of foals every year for the last twenty years. The other night I was looking over the accounts, and I looked up the average price that the foals realised when they were between three and four months old, and I found that the lowest average price was £35 and the highest average price was £50—that is for animals three and four months old. If people can do that, and have no difficulty in doing it, is it likely they would begin to breed remounts, run all the risk, and get £40 when the animals are four years old?

Col. Appleton says that a census ought to be taken of the town horses, and I certainly think that would be most useful. I said at the beginning that there was no scarcity of mares in the country, and that I think you will find to be perfectly accurate. Sir Walter Gilbey a few years ago took a great deal of trouble in getting statistics about the number of mares that were in the country, and he found out there were any amount of mares, and that the foreigners, although they are blamed for buying all the best mares and taking them away, as an actual fact did not buy 5 per cent. of the mares available for breeding purposes. If people would breed from their mares, the mares that were useful for the purpose, selling 5 per cent. abroad would not at all interfere with the matter. It has often struck me that the Government ought to have some regiments mounted with undersized horses, between 14·2 and 15 hands, or even 14 and 15 hands. I think our experience in the South African War brought out very clearly how very valuable that class of horse was in the conduct of a campaign such as had to be conducted in South Africa. These animals stood their work far better than the bigger horses; secondly, they could be kept at very much less cost; and thirdly, they cost very much less to begin with. I think there should be a few regiments horsed with animals of that size on which the lighter men could be mounted. I am certain that that would relieve the situation very greatly.

(To be concluded.)

NINTH INTERNATIONAL VETERINARY CONGRESS, AT THE HAGUE, SEP., 1909.

The Excursions.

The Congress meetings, etc., ended on Saturday afternoon, Sept. 18, when three excursions were arranged for the visitors to see the country and some of its stock. The first began on Saturday, Sept. 18, and ended on Tuesday morning, Sept. 21, in Amsterdam. The second began on Tuesday morning, Sept. 21, and ended on Wednesday, Sept. 22. The third began on Wednesday morning, Sept. 22, and ended at Utrecht on Sunday morning, Sept. 26.

On Saturday afternoon, Sept. 18, some 130 took rail to Utrecht where we dined, and then attended a very good chamber concert (by the Amsterdam Orchestra) given in honour of the visitors of the Congress by the Veterinary Society of the Netherlands.

Sept. 19. During the morning we visited the Calvinist Cathedral, which is separated from a large and mighty tower (338 feet high). The space which separates them was the nave of the old cathedral which was destroyed by a gale in 1674. We then walked round the old part

of the town which preserves its quaint mediæval character.

After lunch carriages were provided, and drove us through very fine avenues and picturesque villages, viz., De Bilt, Huis ter Heide, and De Vuursche and Baarn Wood (consisting of about 1730 acres) to Soestdyke, where the Queen Dowager Emma's country Palace is situated, which looked like a moderate sized country house, but we were not permitted to view it inside. We then walked through a very pretty avenue in front of the Palace to an obelisk to commemorate the battle of Waterloo. We then continued our drive to the village of Baarn, when we partook of a very long, slow dinner (2½ hours, a Dutch characteristic). Next we drove back to Utrecht, and were entertained by the Veterinary Students Corps "Absyrtus" at their club, which was prettily decorated. Speeches of welcome given, music, and refreshments, some of us reaching our hotels in the early hours of the morning; altogether a very enjoyable and sociable gathering.

On Monday, Sept. 20, some of us went to the Market Place, where the weekly sale of horses was going on. We then visited the only Veterinary School in Holland, and were delighted with the general equipment of the place. The new building at the entrance being really magnificent. The library and museum are excellent. The dissecting room well lighted and provided with good specimens, one being quite unique, viz., the fibrous trabecule of a spleen; the method of its preparation is unknown, and a large sum has been offered for it. At 11 o'clock we all attended the unveiling of a beautiful bust in memory of the late Dr. Thomassen, which was a very imposing ceremony.

After lunch some of us visited the museum van Oudheden which was founded by the great grandfather of Jonkheer T. M. van Asch van Wijck, one of the gentlemen who was on the organising committee of the Congress, and who kindly accompanied us part of the journey, and explained the places of interest as we came to them: he spoke English, so he was particularly courteous and useful to our section.

Thence by train to Gooiland, where carriages met us and we drove through Hilversum and proceeded by Laren, which forms the centre of the heathery landscape, of a peculiar colour and atmosphere, called the "land of mauve," to the model farm of "old Bussum," where we were shown some quite up-to-date appliances for the hygienic production of milk. Here we saw a good arrangement for cleaning out the byre; in the centre of the channel behind the cows was a trap door, about 18 inches in diameter, through which all the fæces and dirty straw, etc. could be swept into a tip truck underneath, which ran on rails into a manure shed. The cows' tails were loosely fastened by cord to a rail above the cows, so that when the cow lies down the tail is lifted above the ground out of the dirt etc.

We drove through the village of Bussum, seeing on the way some very fine residences of the rich Amsterdam merchants, and then took train to Amsterdam.

On Tuesday, Sept. 21st, we were taken for a drive round Amsterdam, and then the ladies and a few others were taken round the Jewish quarter of the town, and visited the New Exchange and the Queen's Palace, where some very fine pictures and beautiful carved marble chimney-pieces and cut glass chandeliers were seen, whilst some of us visited the Amsterdam Abattoirs and were escorted round the different departments by the Veterinary Director and two of his assistants, all of whom spoke sufficient English to make us understand their description. They first showed us the laboratory which had all the necessary instruments and general equipment of such a "workshop"; then the museum which was well stocked with various specimens, our attention being particularly drawn to a unique one showing the various stages of development of the Œstrus bovis from the egg to the larval œstrus, the "grubs" having been found in various parts of the body before they reached the subcutaneous habitat. We visited the slaughterhouses, and were shown the methods of killing the various animals. The larger animals apparently generally being killed by the poll-axe or by a shooting-pin. The "pin" is about two inches long, and is forced out by means of a blank cartridge, in the same way as the ordinary "bullet-shooter"; the latter instrument having been discarded as the bullet was too dangerous. The pigs were also poll-axed by a man holding the poll-axe on the forehead whilst a second man struck it with a mallet, and this is certainly a much more humane method than sticking only. Horses—such as they were—some very poor, others with big greasy legs, certainly not very enticing objects for human food—were poll-axed in the usual way. Each carcase is carefully inspected before it is allowed to leave for human food; the condemned meat being destroyed in a large destructor, whilst that only slightly affected, after the diseased parts are removed, is sterilized by superheated steam before being sold. There were very good cold storage chambers. The "runners" are cleaned and sold for sausage skins. The hair is cleaned, sorted, and cut into lengths for brush making. The offal, blood etc. is dried and ground up into manure, everything being done on the place and nothing leaving until it is cleaned and fit for the purpose it is sold for.

After lunch some of us went for another drive round the better part of the town and visited the State Museum, where we saw some of the finest pictures in the country, amongst them being Rembrandt's "Night-watch," *(Nachtwacht)*; the "Syndics of the Guild of Cloth-makers," *(Staal Meester)*, and the portrait of Elizabeth Jacobsd Bas, and others, and there were many more we did not see for want of time, it being one of the largest and finest museums in the world. Others of the party made a visit to the Zoological Gardens. We then took a trip on the steamer to Zaandam, where Peter the Great lived to learn shipbuilding, and some visited the hut, which is still standing (under difficulties) in which he lived. We then wished "good-bye" to many of our English friends and others who were returning home from here next day.

On Wednesday morning, September 22, a small party (about 14) of us, with Professor H. M. Kroon, of the Utrecht V.S., who now kindly joined the party and accompanied us, crossed the harbour by steamer, and took steam tram to Purmerend, where carriages met us and conveyed us through the Bermster Polder-land. (Polder-land is "reclaimed land;" by pumping out the water from the land which was once a shallow lake below the sea-level, this one being about 17,298 acres). Here we visited a fine pedigree herd at Mr. Arie Bos' and another belonging to Mrs. de Goede-Visser, of black and white Frisian cattle, noted for their milking properties. We were very much tickled at the owners, when they asked us into the cowsheds, taking their wooden shoes off and leaving them outside before entering. When we got inside we found a carpeted walk through the shed, and where the cows stand when in the shed sanded and a pattern imprest on it, making the place look tidy, neat and very clean, so much so that part of the shed in one place we went to was turned into a dwelling room for the family during the summer months, when the cows are at grass. The cows are generally turned out to grass in April or May and are not brought into the sheds again until October or November according to the weather.

We drove to Midden Bermster and took steam-tram to Alkmaar, where we were met at the railway station by the local veterinary surgeons and conducted to a fine show of vegetables and cheeses (known in the trade as Edammertjes) and then to the Alkmaar Branch of the Dutch Agricultural Show of Cattle—which

The Veterinary Record, October 30, 1909.

UMI

TUBERCULAR PERICARDITIS IN THE DOG.

(To illustrate note by Mr. E. Wallis Hoare.)

they postponed one day on purpose for the visitors of the Congress to visit it. It was a small show held on the market place, but there were some very good animals amongst them.

We lunched, and afterwards drove round the town. Then took train for Hoorn, a little place on the Zuider Zee, and visited the experimental dairy farm, with its bacteriological laboratory for the examination of all food stuffs, manures, and seeds—a place well equipped for the purpose, kept up, of course, by the State.

Here we had dinner and then took train for Enkhuizen, where we went on board the steamer, which carried us safely over the Zuider Zee to Stavoren, and from there by train to Leeuwarden (the capital of Friesland) where we slept and breakfasted. Here we found another language (boeren-friesch) was spoken, which we were told was as strange to the Dutch as it is to the English.

On Thursday, Sept. 23, we were taken by carriages to the Frisian Agricultural Association's head quarters and inspected the herd-books, and then on to Wirdum to visit some Frisian farms. We were shown some very fine cattle; at one farm black and white Frisians, at another red and white Frisian. One of the farmers (Mr. J. A. Palsma) also showed us a very fine collection of china and a well apportioned Dutch home.

Next we proceeded by train to Gröningen, where we were again met by some of the local veterinary practitioners who conducted us to a show of stallions and mares in harness, which struck us as being heavy, clumsy animals and much too fat, although one or two of them went very well, but not up to the standard of an Englishman's eye. The Groningen Department of the Dutch cattle pedigree book very kindly brought together some of their locally bred cattle for our special benefit. This breed are also black and white, and some red and white, their characteristic being either white or black heads, those with white heads having usually a ring of black round the eyes. They are smaller and not so level in their bodies as the Frisian cattle, but we were told they fatten more readily and make better beef. We also learned that the Dutch prefer cow-beef. Most of the steer-beef and the mutton fattened in the country is sent to England as "dead meat."

On Friday, Sept. 24, we started at 7 a.m. by train to Arnhem (the capital of Gelderland) where carriages met us and took us to the Klarenbeck Estate, where the President of the Gelderland Pedigreebook (Baron van Voorst tot Voorst te Elden) kindly invited us to a most sumptuous lunch, and after numerous toasts during the repast conducted us to an exhibition of horses collected together for our special benefit by the various breeders in the neighbourhood. These comprised:—

1. Some two-year-old mares bred in the country.
2. Three-year-old mares.
3. Stallions (Oldenburgers and East Frisian) in harness.
4. Belgian stallions.
5. Mares.
6. Oldenburger and East Frisian stallions in harness.
7. "Diplomatist," a champion Hackney stallion, the property of the President (W. Baron van Voorst tot Voorst te Elden) who bought him in England for £1000.
8. Mares 4 to 7 years old shown in hand.
9. Oldenburger and East Frisian stallions shown in hand.
10. (*a*) Hackney stallion ("Alethorpe Admiral") with one of his progeny out of a native mare.
    (*b*) An Anglo-Norman stallion, "Tourbillon," with one of his sons out of a native mare.
    (*c*) An Oldenburg stallion, with one of his progeny out of a native mare.
11. Anglo-Norman stallions in harness.
12. Stallions bred in Gelderland shown in hand.

Some of these were very fine horses with plenty of bone and action, but so far as we could judge, they do not get the quality of our English blood. The Oldenburger is a big fine mover, but certainly on the coarse side, lacking quality. However, it looked the kind of animal to cross on some of our lighter Hackneys, deficient of bone.

We were then driven through some of the beautiful beech avenues on the outskirts of Arnhem; one which takes an hour to drive through called the "Middachter Allee" has some very imposing residences on either side. Then back to the hotel (Grand Hotel du Soleil) when W. Baron van Voorst tot Voorst te Elden and his two sons joined us at dinner. After the toasting Professor Kroon left our party for his home with our best wishes, and his place was taken by Dr. W. J. Paimans, of the Utrecht School. Soon after Mr. J. J. Bell, of Carlisle, left the party, with our good wishes for a pleasant journey to England. We spent the remainder of the evening listening to some very good music.

Saturday, Sept. 25. We took an early walk in Sonsbeck Park, and some of us climbed the "Belvedere Tower" to view the surrounding country, but it was somewhat misty, so we could not see very far. We then started by boat down the old Rhein to Oosterbeek, where we took lunch, and after drove to Doorwerth and visited the model farm called "Het Huis ter Aa," situated in a beautiful spot on the top of a hill overlooking the river. It is under the direction of a wealthy gentleman, who takes the greatest interest in the whole concern. A doctor and a veterinary surgeon are attached to the place, and all the employees live on the establishment. The milk is sterilized and bottled, butter made and packed, bottles washed, etc., all by machinery. The milk and butter kept in a cooling house, rendered cool by ice made on the place. Everything was built of glazed tiles, even the pig house was tiled with white glazed tiles, and kept beautifully clean. In fact it was the most elaborate hygienic establishment of butter and milk manufacture we had ever seen. It alone was worth the trouble and expense of a visit to Holland to see.

We then drove through the estate, which was beautifully laid out with trees, to a small village called "Regnum" (?) or some such name, and here we took the steam tram and visited the Institute of Photopathology, the National School of Agriculture, Horticulture and Aboriculture, the National School of Agriculture, and the Agriculture Experimental Station, where we were introduced to the Director, who graciously conducted us over the various departments and explained the most interesting features of the place. It certainly gave us the impression of being quite up to date, especially in the department which perhaps we were better able to appreciate than were some of the others, viz., that for teaching the various breeds of stock, their age, uses, and their structure and formation; and they had a museum which would certainly place that of our English veterinary schools in the shade. When we had finished these interesting establishments carriages awaited us and conveyed us to "The Hotel of the World" at Wageningen, where we had dinner and a good deal of "toasting," and where one of the gentlemen, who had accompanied us on the whole excursion, and who had been indefatigable in describing and finding out all places of interest along the trips, and who we may say did all in his power, and succeeded, greatly to our satisfaction, in making our trip exceedingly pleasant and enjoyable, and to whom we all owe a deep debt of gratitude, viz., Baron Van Voorst tot Voorst, one of the organising committee of the International Veterinary Congress, and a nephew of the President of the Gelderland Pedigree book who so sumptuously entertained us to lunch, and got together such a good show of horses for our inspection at Arnhem, left us for his home, with our good wishes and thanks for his kindness and assistance. We then took

the tram to Ede, and the train on to Utrecht, where we stayed the night and breakfasted, and after much hand-shaking and adieux our merry little party broke up, each going their own sweet way.

We made our way back to Amsterdam and took the steamer to Monnikendam, Volendam, and Marken, in order to make ourselves acquainted with some of the quaint native costumes of the country. Marken is a small island in the Zuider Zee, and we were told that they seldom marry outsiders, which we thought from the appearance of the people generally was a bad thing, for the results of in-and-in breeding was very painfully patent to us. We arrived back at Amsterdam in nice time for a quiet dinner before the boat train took us to the Hook of Holland, where we boarded the G.E.R. ss. "Copenhagen," which, after a smooth passage, landed us to time at Parkestone Quay.

G. B.

The Construction of Stables in Relation to the Prophylaxis of Diseases of Animals—especially Tuberculosis—and also on the Hygiene of Milk.

Report by Mr. J. S. Lloyd, F.R.C.V.S., D.V.S.M.Vict., Chief Veterinary Inspector for the City of Sheffield.

Concluded from p. 274.

Prophylaxis of Disease.

Under the New Milk and Dairies Bill lately introduced before the British Parliament, and intended, when passed into law to deal with infection in milk, or infection carried by milk to human beings, the expression "infectious disease" means small-pox, cholera, diphtheria, membraneous croup, erysipelas, tuberculosis, the diseases known as scarlatina or scarlet fever, and the fevers known by any of the following names, typhus, typhoid, enteric, relapsing, continued, and includes any other disease prescribed by an order made by the Local Government Board under this Act. As mentioned at the beginning of my report, I intend to divide the diseases as affecting milk supplies into two groups (1) diseases communicable from human beings to human beings, and (2) diseases communicable from bovines to human beings.

Group 1. A glance at the above list of diseases shows that with the single exception of tuberculosis, none of the diseases named are met with in cattle, I am aware that some medical authorities will not agree with this statemtnt, at least, so far as scarlet fever is concerned, and will probably cite the celebrated Hendon case in support of their opposite views. Sufficient evidence, or perhaps one may better say, want of evidence, has been adduced to convince all veterinary surgeons and most medical men that the conclusions arrived at in that case were erroneous. As tuberculosis will be dealt with later, it can for the present be passed over. Regarding the other diseases mentioned, it is well known that epidemics of scarlet fever, diphtheria, and typhoid fever have been spread by contaminated milk, but in all these cases either the milk has been contaminated by infected persons coming into contact with the milk, or, in the case of typhoid, by the milk vessels being washed in specifically polluted water. As is well known now, patients apparently recovered from some of these diseases are capable of throwing off the infection for months and occasionally for years; in other cases, patients have such mild attacks that absence from work during illness is not thought necessary for apparent recovery; still, such patients and convalescents are dangerous to others, and, no doubt, are capable of infecting milk and so causing disease to spread. Such persons should not be employed in the milk business until a medical man certifies that all danger of spreading infection is passed. A disease communicable from human beings to human beings not mentioned above is measles, and medical men often are suspicious of milk-borne infection in epidemics of this complaint. For this reason it is advisable that children should not be allowed in cowsheds or dairies.

Group 2. It is well known that epidemics of sore throat are often traceable to contaminated milk, and these are the cases most resembling scarlet fever, diphtheria, etc. There is little doubt but that such cases are due to streptococcal infection conveyed from purulent mastitis in the udders of cows, and ulcerating lesions on the skin of the udders. Cowkeepers are much to blame for gross carelessness in these cases, but now that heavy damages have been obtained against a few dairymen by sufferers from such complaints it is to be hoped that greater care will be taken in the future. In the writer's experience, it is not at all uncommon to find cowkeepers selling cow's milk which is considerably altered from the normal, or selling milk from cows the udders of which have ulcerations on the skin or even discharging abscesses in the tissue of the gland itself. The specific diseases in cattle other than tuberculosis capable of being conveyed to human beings fortunately are not many. The only disease in which the removal of milk from diseased cows is specially prohibited by the Board of Agriculture is Anthrax. Fortunately, there is very little danger in such cases, as the animal is usually found dead when the disease is first noticed, and in cases noticed alive, milk secretion is in abeyance. Another infectious disease of cattle occasionally seen in this country where cases of infection have been known to be carried from affected cattle to human beings is foot-and-mouth disease. Fortunately, this disease is never likely to become epizootic in this country again, but should an outbreak occur, care should always be taken to see that the milk is destroyed and not used as human food. Another contagious disease of cows capable of conveyance to human beings is cow-pox.

It is not at all an uncommon occurrence for milkers to have outbreaks of this complaint on the skin of their hands and arms which they have caught whilst milking affected cows, but, fortunately, this disease is generally benign, and the complaint is not usually of much danger to the persons attacked. Opinions differ as to whether the fore-milk or beastings of cows is capable of causing disease in human beings. Some medical authorities assert that infants which drink beastings have been affected with indigestion, colic, and diarrhœa. This may be the result if the beastings are taken in the raw state, and taking into consideration that blood and cell tissue *débris* is often present in the milk first drawn from the udder it is evident that such milk should not be used for human food at all for the first 24 hours after parturition, and only after cooking for the next 5 or 6 days. With cooking (boiling) after 24 hours, it is well proven that beastings is not dangerous. At most farms in the country it is the general rule to make custards by the use of such milk and with no ill effect to the consumers.

Tuberculosis.

The majority of authorities are now agreed that this disease is capable of being communicated from bovines to man by means of tuberculous milk. No good object would be attained by detailing the arguments for and against the assertion made by Koch in 1901. In this country the Board of Agriculture has recently made an Order intended to diminish the amount of tubercular disease amongst cattle, and largely with the intention to diminish the risk of infection possible of being carried to human beings by the consumption of milk from

* Read at Ninth International Veterinary Congress at the Hague, Sept., 1909.

tuberculous cows. The order requires notification of tuberculosis, chronic induration or any other chronic disease of the udder; also of cows emaciated from tuberculosis. Notification is to be followed by veterinary investigation, and, in cases where tuberculosis is stated to exist, compulsory slaughter with compensation follows. The amount of compensation varies according to whether the existence of the disease is confirmed by post-mortem examination, and in confirmed cases according to whether the disease is advanced or not. If a mistake has been made in diagnosis, the full value of the animal plus twenty shillings must be paid. If the disease is advanced and the carcase condemned, the value of the carcase or 40 shillings, whichever is the most, has to be paid. When the disease is not advanced and the carcase or part of it is passed as human food, three fourths of the value of the animal is to be paid. (The Tuberculosis Order of 1909 comes into force on January 1st, 1910.) Further, in order that sanitary authorities may have power to deal with tubercular infection in milk offered for sale and intended for human consumption, the Right Honourable the President of the Local Government Board has recently introduced into the House of Commons the Milk and Dairies Bill previously alluded to. If this passes into law, it is intended to be enacted in more or less conjunction with the Order just mentioned, and will come into force at the same time. The intention of this Bill is to generalize and standardize dairy inspection, improve the sanitation of dairies and cowsheds, afford more stringent measures for dealing with infection in milk and more particularly tubercular infection. Very extensive powers are intended to be given to the Local Government Board who, in case of defaulting local authorities will be able to compel the latter to carry out their obligations or even carry them out for them at the expense of the local authorities. For some years, various large towns in England have had somewhat similar powers, and, where they have been enforced, considerable benefit has been derived. Such legislation, however, was only piecemeal, it had numerous drawbacks, and to remedy these faults Mr. Burns has now brought forward his long promised Bill, and no doubt when this is passed into law greater good will result.

The relations between prophylaxis of diseases of bovines and the construction of cowsheds may be described as two-fold—curative and preventative. Both can be summed up in two words—good hygiene. To cure diseases—or rather in order that nature can assist the physician to cure under the best conditions—it is essential that the patients have quietness, warmth, fresh air, and good nursing. So that all these can be obtained to the best advantage, it is advisable that in connection with all cowshed premises should be attached good, roomy, well lighted and well ventilated loose boxes in which to house the patients. These should be situated in the sunniest part of the premises, away from manure pits, piggeries, etc. They should be well built, have good, dry floors, be well drained and supplied with plenty of good bedding. By placing sick animals in such boxes, there is not only the possibility of assisting in the cure of diseases, but, by using them for isolation purposes, there is the probability of their assisting in the prevention of diseases by curtailing the spread of infection. To keep cows healthy, it is essential that the cowsheds should be hygienic in every sense of the word. Good light, good ventilation, plenty of air space, a good arrangement of cowshed, good water supply, good drainage and cleanliness, all tend to keep cows in a vigorous healthy state, able to a considerable extent to withstand infection, and, if attacked, better able to conquer the ravages of disease.

Hygiene of Milk.

In order to acknowledge the relationship between construction of cowsheds and the hygiene of milk, it is necessary to shortly enumerate the various means of contamination which can take place in or around the cowsheds. The sources of contaminated milk at the farm may be briefly stated as follows—insanitary cowsheds, dirty or diseased cows—especially cows with diseased udders—unclean and diseased milkers, dirty milk vessels, exposure of milk in milking sheds to dirt, dust, dogs, cats and flies, proximity of sewers, cesspools, manure pits, piggeries, poultry and pigeon houses, dirty and badly ventilated dairies, impure water supply, inefficient cleansing of milk vessels, want of proper sieving, mixing old and new mild, exposing milk in dairies to dust and bad smells. In order to prevent or even minimise the contamination of milk, it is essential that all practical steps should be taken to get rid of the sources of contamination just enumerated. The cows should be kept clean by frequent grooming—washing if necessary—a good arrangement of the cowshed floors and plenty of good bedding. The milk of sick cows or of cows suffering from diseased udders should not be used for human consumption. The milkers should be cleanly in person, dress and habits, and free from disease. In order that their hands may be cleansed before and during milking, such facilities as clean water, a bowl, soap and towel should be provided in or adjacent to the milking shed. The milk vessels should be efficiently cleansed with boiling water before use, be stored when not in use in a sanitary dairy away from bad smells and dust. To prevent milk being contaminated by dirt it is essential that the cows be clean, that the milkers hands be clean, and that the cows be "dry milked." To prevent dust getting into the milk it is necessary that the cowshed should be free from the dust caused by grooming or feeding the cows or from dry cleansing the cowshed. In order to prevent this, it is often recommended that the cows be milked in separate milking sheds or out in the open air. Milk ought not to be contaminated by dogs and cats, and especially as this can so easily be prevented either by putting the milk in an enclosed place where dogs and cats cannot enter, or by keeping the dogs and cats away from the premises during milking hours. To keep the flies away is a much more difficult process. Various methods of prevention, such as the use of wire netting on doors and windows have been recommended. Because it is now considered proved that contamination of milk by flies is a source of infantile diarrhœa, it is essential that such contamination should be minimised, and this can best be done by keeping down the number of flies by removing their breeding places as much as possible. To do this it is necessary to have all manure pits and manure—especially horse manure removed as far from the cowsheds in hot weather as possible. Further to prevent fly contamination, the milk should be stored in cool, light, airy dairies and here the ventilators and windows can be covered with wire gauze with advantage. To prevent the absorption by milk of bad smells, it is essential that cows should not be milked or the milk stored near sewers, cesspools, piggeries, poultry, or pigeon houses. The cows should never be bedded with horse manure, the cowsheds should not contain decaying turnips, sour grains, or other evil smelling substances. The dairies should not be used for keeping herrings, paraffin, turpentine, or any volatile agent.

Immediately the milk is drawn from the cow, it should be removed from the cowshed to a cool, well ventilated dairy, free from dust, where it should be immediately sieved and cooled down to as near 50 F. as possible. A frequent source of bacterial multiplication in milk is the mixing of old and new milk together, such as that of the morning with that of the previous night. It is far better to keep such milk separate. It is in the prevention of bacterial multiplication that the keeping of milking cows in towns—close to the consumers—has the advantage over the keeping of such cows in the country

—often long distances away from the consumers. Many people—particularly Jews—like to have the milk supplied in a warm, fresh condition. In the case of "country" milk this is impossible, and the only means of keeping milk fresh during long railway journeys, with their attendant disadvantages of travel in carts on dusty roads, in evil smelling and badly ventilated railway vans, by exposure in both and on railway platforms to the hot rays of the sun, is by rapidly cooling the milk before commencing the journey and by its conveyance during the journey in refrigerated vans specially for milk transit. The latter desirable method is in vogue to a very considerable extent in America, but, so far, has hardly been adopted by railway companies in England. It is now well known that refrigeration prohibits the rapid multiplication of germs and does not destroy the enzymes and beneficial bacteria present in milk. Pasteurisation and sterilisation do both, and are often condemned for those reasons. The aim of sanitarians should be to get good milk from clean, healthy cows, and keep it as pure as possible up to the time of consumption.

Finally, there remains one important element which is absolutely necessary to have clean cowsheds, healthy cows and pure milk, and that is, a good and bountiful supply of pure water. Now that it is well established that tubercle bacilli pass from infected cattle in large quantities along with the fæces, it appears suicidal to allow cows to wade into ponds, there to urinate and defæcate. Where the only source of water supply is by the use of ponds, it appears to be absolutely necessary that such ponds should be so fenced off as to prevent the cattle going into the water to stir it up and cover their legs, bellies, and udders with infected mud. Where it is at all possible, water should be supplied to cowshed, dairy and premises generally by means of pipes, care being taken to see that the source of the water is good and that pollution *en route* is effectually prevented. Whether cows should be provided with a constant supply of water by means of water troughs in the cowsheds is practically often a matter of expense. The opinion of experienced veterinary surgeons is, that cows having such an ever-present water supply are far less liable to chills and indigestion than cows who only get water once or twice a day. A good supply of water in every cowshed is desirable if only for cleansing purposes. To keep a cowshed clean, free from dust and bad smells, it is essential that the dung and urine channels should be flushed daily, and the milking passage should be similarly treated as often as it necessary to keep it in a cleanly state.

Milch Cows and Scarlet Fever.

It may be remembered that in June, 1909, an outbreak of scarlet fever occurred in London and Surrey which affected a great many persons, and was traced to milk distributed by a company having widespread operations in the metropolitan district. There was some doubt as to how the milk became infected, and a further report on this point has now been issued by the Public Health Committee of the London County Council. Having regard to the extent of the outbreak—upwards of 400 persons were affected—a joint inquiry was undertaken by Dr. W. H. Hamer and Dr. T. Henry Jones (acting for Dr. Seaton, M.O.H. for Surrey), with the assistance of Dr. Mervyn Gordon as bacteriologist. Assistance was also rendered by the medical officers of the affected districts, and by the officers of the milk company. Sir Shirley Murphy states that from a perusal of the joint report no reasonable doubt can be entertained that the milk of a particular farm was responsible for the occurrences of the scarlet fever in the two counties. In the past, two hypotheses of milk infection have been discussed, the one that the milk acquires its infective property from a human source, that it is in fact infected by the milker or by some other person suffering from scarlet fever; the other, that milk is infected by some condition of a cow or cows. It has been observed on former occasions that inquiry has failed to demonstrate that human agency has been responsible for the infective condition of the milk; such inquiry has often shown that even when one or more persons engaged on the farm have suffered from scarlet fever the dates of their infection have been subsequent to the dates of infection of the consumers of the milk—in fact that the milkers suffered, as other persons, from consumption of the milk. In the outbreak investigated by Dr. Hamer and Dr. Jones it was found that scarlet fever did occur in the family of a milker, but that the evidence in connection with this occurrence could not be regarded as affording explanation of the infection of the milk by human agency, while it distinctly suggested that the milk was infective before leaving the farm. Careful inquiry in the neighbourhood of the farm failed to yield any evidence of the existence of a human source of infection of the milk. Sir Shirley Murphy points out that in similar circumstances Sir William Power, when investigating in 1882 an outbreak of scarlet fever in certain London districts, made the suggestion that inasmuch as "there is one sort of relation between scarlatina and accidents of the puerperal state, another sort of relation becomes comparatively easy of belief," in fact, that "if scarlatina in man have other animal source than human source, it may be that one such source is the cow that has recently calved, a cow either not at all ill (except for her parturition) or not so obviously ill as to prevent her milk being used for human consumption." The suggestion thus tentatively made, in 1882, assumed greater importance when Sir William Power in 1885 advanced evidence of the bovine origin of scarlet fever occurring in persons consuming milk from a Hendon farm, the cows at which were affected with an eruption of the teats and udder. A similar development of scarlet fever in man, associated with the consumption of the milk of similarly affected newly-calved cows, or cows infected from such newly-calved cows, has been observed in a number of instances since that date. In London in 1892, and again in 1894 and 1902, considerable prevalence of scarlet fever, due to infected milk, was strongly suspected to have been originally of bovine origin. In the present instance a like possibility was naturally entertained, and it has been found possible, by study of the farm operations in minute detail, to show that just at the time when the milk first began to show infectious property, there was added to it the milk of three cows which had recently calved, and that the calf of one of them had died after being suckled by the cow for four or five days. These circumstances, together with the fact that the three cows mentioned and other cows at the farm showed at the time of the inquiry appearances upon teats and udders suggestive of "Hendon disease," render it probable that a morbid condition of the cow was responsible for the subsequent human illness. In conclusion, Sir Shirley Murphy says that from the administrative side it deserves to be noted that, with the cordial assistance of the manager and secretary of the company, whose action deserves recognition, early localization of the source of the mischief was possible. This was due to the particular system of distribution of milk maintained by the company—a system which had proved in this case to be of value alike to the public and the company.—*British Medical Journal.*

DISEASES OF ANIMALS ACTS 1894 TO 1903, SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Counties Affected	Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Animals Attacked	Out-breaks	Out-breaks.	Slaugh. tered *
GT. BRITAIN. Week ended Oct. 23	22	24			13	25	Essex 4	3	28	252
Corresponding week in 1908 ...	19	21			11	29	Hertford 2	8	32	213
Corresponding week in 1907 ...	19	29			12	27		7	32	210
Corresponding week in 1906 ...	14	22			24	64	London 16	4	23	165
Total for 43 weeks, 1909	1071	1405			459	1601	Monm'th 1	492	1413	12699
Corresponding period in 1908 ...	899	1189	3	112	684	2113	Surrey 1	660	1720	10545
Corresponding period in 1907 ...	897	1207			723	1647		441	2078	9889
Corresponding period in 1906 ...	753	1079			917	1741	Lanark 1	331	959	5493

Board of Agriculture and Fisheries, Oct. 26, 1909.

							Parasitic Mange			
IRELAND. Week ended Oct. 16	1	1	...	...	...	...	1	5	...	...
Corresponding Week in 1908 ...	...	...	...	...	...	...	...	2	1	4
Corresponding Week in 1907 ...	...	...	...	...	...	...	...	2	5	78
Corresponding Week in 1906 ...	...	...	...	...	...	...	3	3	1	5
Total for 42 weeks, 1909	8	8	...	...	...	...	69	316	86	1556
Corresponding period in 1908 ...	7	10	...	...	...	...	34	288	148	3469
Corresponding period in 1907 ...	3	5	...	...	5	9	71	205	134	2277
Corresponding period in 1906 ...	3	7	...	...	6	14	78	183	84	948

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 20, 1909.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

GLASGOW VETERINARY COLLEGE, INCORPORATED. OPENING OF SESSION.

The College entered upon a new era in its history on Wednesday last, 20th inst. It has recently been reconstituted, and the first session under the new arrangements was opened with a lecture by Professor Noel Paton, of Glasgow University. The Chairman of the Governors, Sir Hugh Shaw Stewart, presided, and there was a large attendance of students and others interested.

The CHAIRMAN said the governors were in good spirits, because they came before them with a reconstituted College. He need not go over the history of recent years further than to say that at one time there was every indication that there was to be only one Veterinary College for Scotland, and that it was to be in the East country. Many in the West, who thought that would be a great pity, did what they could to move the Government to help them to keep the Veterinary College in the West of Scotland as well as the one in Edinburgh. They also did what they could to interest the various county councils in the West of Scotland. He was glad to say their efforts had met with complete success. (Applause.) They had now £5,000 paid up by the Government, and a promise of £250 a year. They had collected in voluntary subscriptions another sum of £5,000, also paid up, and had received promises of subscriptions sufficient to enable them to look forward to an additional income of £250 a year. (Applause.)

Prof. NOEL PATON in his address dealt with the position and prospects of the veterinary profession. The greater the prestige of their profession the better would be their position. Perhaps at present they did not think the prospects of their profession particularly bright. They thought the inauguration of mechanical means of progression had at least cut off very largely one of their most lucrative patients—the horse. In the hunting field, however, the horse would not be superseded, and he thought that in the Army the use of the horse must increase. Not only must they look to the horse in the future but undoubtedly the greater recognition of the importance of cattle, not only in this country but still more in the Colonies and in various foreign countries, must open out an extensive field to really competent men—men who were capable of investigating diseases and of ascertaining means of protection and of prevention. Reference was made to the recognition of the importance of this by Governments. Let them look at the way in which rabies had been stamped out. Let them look at the recognition of the relationships of tuberculosis in man and tuberculosis in the lower animals. Let them look at the amount of work that had still to be done to remove that awful scourge from this country—a scourge which was probably second (if second) to the drink question. If their profession was to rise in future it must be by the increased education and the better training of those who passed into it. One regretted that facilities for such education were probably less in this country than in most foreign countries. They were at the starting point of a new era in the history of this College, and it must now put before itself a high ideal of training. It must decide that it should send forth only students thoroughly trained to undertake the highest duties of the profession. Asking how that was to be done, he pointed out that the first essential was a thorough grounding in the elementary sciences. If this training was to be of any use it must be practical. Unfortunately this practical work was extremely expensive, and therefore in order to secure it for the students of this and other Veterinary Colleges they must either get enormously increased endowments for the building of laboratories and the maintenance of teachers, or approach

the Universities, in which facilities had been already developed for such practical teaching, with a view to getting their assistance in the elementary part of their education. (Applause.) He made that suggestion of his own accord. It rested with the Governors (as he hoped they might) to come to such arrangements for the students on the one hand and with the Universities on the other. He saw no reason why the elementary sciences should not be taught to veterinary and medical students side by side. Under such an arrangement the funds of the Veterinary College might be devoted more thoroughly to the clinical aspects of the subject.

Prof. GLAISTER proposed a vote of thanks to the lecturer, which was passed unanimously, and on the motion of Mr. Alexander Park, a similar vote was passed to the Chairman. Mr. Park pointed out that the Chairman had exerted a powerful influence in bringing the College to its present satisfactory position.

The CHAIRMAN, in acknowledging, said that any trouble he had taken in bringing about the reconstitution of the College was amply rewarded by seeing it start free of debt. Any mention of the College without the name of Principal M'Call must imply some omission. (Applause.) They had kept his name to the last, but he was certainly not the least to be thought of that day, and he congratulated him that the work of his life was now on such an established footing. (Applause.)

Principal M'CALL, who was cordially received, submitted the list of prize-takers during the past session, and went on to remark that for 52 years he had been a teacher in the institution. They had experienced many difficulties during the past ten years, and latterly he felt that unless some assistance was to come he could not carry on the institution. He felt proud that the College was to be continued. (Applause.)—*Glasgow Herald*, October 21st.

ROYAL VETERINARY COLLEGE OF IRELAND.

OPENING OF SESSION.

The tenth session was inaugurated on Tuesday evening, 26th inst, in the new Lecture Theatre of the College.

Prof. METTAM, Principal of the College, stated that during the last session 81 students of the College had passed the examinations of the Royal College of Veterinary Surgeons (Applause), and twenty had received their diplomas as Members of the Royal College of Veterinary Surgeons, which, he thought, everyone would admit was a very satisfactory record. (Applause). He read the prize list for the session, and, referring to Mr. Daniel Kehoe, of Dublin, who won several distinctions. said that the Board of Governors, recognising Mr, Kehoe's extreme ability, had appointed him to the staff (Applause); and they had looked forward to his taking part in research work in the profession. (Applause).

Sir CHRISTOPHER NIXON introduced Dr. Theiler. Before calling on him, he said he would like to offer his most warm congratulations to the students to whom they had awarded their medals and prizes. He hoped their success was but a prelude to their greater success when they left the walls of that College. At the same time he desired to sympathise with those who had not won in the struggle. They had, he presumed, done their best; he hoped they would not be discouraged, and that they would try again. He expressed the warm thanks of the Governors, and of those present, to Dr. Theiler for the trouble he had taken in coming there that even- He spoke of Dr. Theiler's distinguished record, and referring to the aid given to veterinary science in South Africa, said they knew how stinted were the resources of that College. Though Ireland was recognised to be an almost strictly agricultural country whose wealth was largely derived from flocks and herds, they had great difficulty in getting a proximate subsidy for that College.

The address was delivered by Dr. Arnold Theiler, C.M.G., Hon. Associate of the Royal College of Veterinary Surgeons, Veterinary Bacteriologist to the Transvaal.

Dr. THEILER, who was warmly applauded, in the course of his address, said that when their Principal, Prof. Mettam, wrote to him some months ago to South Africa asking him to deliver an address, several reasons induced him to accede to the request, one of them being that an acceptance would enable him to see the country from which several of his best friends, in and out of the profession, had sailed to South Africa, where they proved themselves to be excellent Colonists. Having referred to the important position which the breeding of cattle occupied in the British Colonies, he said it was the duty of the Government to offer facilities for the organisation and maintenance of institutions where the diseases of animals were studied. South Africa offered a great example, especially the Transvaal. At the expense of about £80,000, they had put up laboratories, chiefly intended for research in connection with animal diseases, and there was an annual grant of £25,000 exclusively for the study of animal diseases which devastated the stock of South Africa. (Applause.) The knowledge gained in such institutions formed the basis of all prophylactic measures undertaken either individually or by the Government through its veterinary authorities.

There were two great groups of cattle plagues or diseases in South Africa—contagious and non-contagious ones; or, better, directly contagious and indirectly contagious ones. By directly contagious diseases they understood diseases for whose propagation the presence of sick animals, or their products in the form of excretions or exhalations, were necessary. The directly contagious diseases which were known in South Africa were rinderpest, pleuro-pneumonia, glanders, epizootic lymphangitis, anthrax, quarter-evil, tuberculosis, and scab. The etiology of these diseases, with the exception of rinderpest, had been worked out in Europe. The scientific study of rinderpest on modern lines might be claimed for South Africa. The source of all infection, the reservoir of the virus, was the sick animal. Removal and destruction was, therefore, the main object. To this principle they all agreed, both in Europe and South Africa; but as to the means of achieving it they differed. When a plague like rinderpest suddenly swept down over the side of a whole Continent, killing hundreds of thousands of cattle in its progress, the immediate idea of combatting such a plague was not its stamping out, but the saving of the greatest number of cattle exposed to the infection. In the case of rinderpest the exposed animal was either killed or rendered immune. The former was the old method of Europe, where probably even now it would be the only right one to adopt. The latter was the Colonial method. There were two forms of immunity—the active and the passive, the former being procured by vaccination and the latter by the injection of a protecting serum.

In the case of pleuro-pneumonia, experience in Europe had proved that not only the sick animal, but also the apparently recovered animal, in other words, the chronically sick animal, was a reservoir of the virus. For the successful stamping out of the disease the destruction of the animal was therefore essential. In South Africa they recommended the killing of every sick animal suffering from pleuro-pneumonia. They had been able to clear the Transvaal of all rinderpest and all pleuro-pneumonia. (Applause.) The former disease had completely disappeared from South Africa, though it was still lurking in the far North. Pleuro-pneumonia was still present in some of the Colonies, and was occasion-

ally imported into the Transvaal, but its final eradication was in view.

In the case of glanders they made use of the approved methods of Europe, tracing the infection to its introduction, ascertaining the infected animals principally by means of mallein and destroying the reservoir of the virus. In Rhodesia glanders had entirely disappeared. All animals reacting to the test had been killed, and only such animals were allowed to be imported as passed the test. The principle of destroying the infected animal was also largely applied in combatting epizootic lymphangitis. In anthrax and quarter-evil also the approved methods of Europe were made use of successfully.

Tuberculosis had not yet made its appearance amongst the native-bred cattle of Africa, but it has appeared amongst the pure-bred and cross-bred animals of imported stock. The object they aimed at was the prevention of its spread by the destruction of the infected animals and the control of importation. Here also they made use of the tuberculin test, and they were looking forward to the discovery of improved methods.

Scab was the sore point of the South African veterinary surgeon. They were not in the happy position of the sister Colonies of Australia and New Zealand, where the disease had completely disappeared. In South Africa its eradication had been made the subject of political rather than of purely economical discussion, and was placed beyond the complete control of the veterinary authorities.

The second group of diseases with which they had to deal in South Africa were the indirectly contagious ones. Sick and infected animals communicated the infection by means of an intermediary host, which was either a tick or an insect. In this group had also to be ranged some very important diseases, caused by invisible or ultra-visible and filtrable micro-organisms. In this second group were included Texas fever, or redwater; East Coast fever, biliary fever of horses, and biliary fever of dogs. In conclusion Dr. Theiler said the Colonies required of good men only the best, and for them there did exist a great future. (Applause.)

Dr. HORNE, President of the College of Physicians, in proposing a vote of thanks to Dr. Theiler, said that one portion of his address to which the Chairman had listened with great interest, was that in which he referred to the amount of money available in South Africa for scientific investigation. They knew the difficulties that existed in Ireland in this respect. Though Ireland was one of the greatest centres in the world for the production of live stock, that College had only been in existence for the past ten years, owing to lack of funds. He hoped Sir Christopher Nixon would be able to obtain from Dr. Theiler the secret of how they had been able to obtain this vast sum of money in his country.

Mr. W. FIELD, M.P., in seconding the vote of thanks, said the secret which Dr. Horne wished to learn was this—that they had Home Rule in the Transvaal. (Loud applause). Ireland was more free from cattle disease than any other country in the world, and he thought that was largely due to the efficiency of the staff over which his friend, Mr. Hedley, so ably presided. (Applause). They had now, he understood 130 students in that College, and their proportion of passes was greater than those of older established Colleges in England and Scotland. (Applause) Ireland had been behind all Europe in the starting of a Veterinary College. Were it not for Sir Christopher Nixon and the able help he received in other quarters, and were it not for the questions he (Mr. Field) asked in the House of Commons (Laughter and applause) it was probable that they would not yet have had a Veterinary College in Ireland. Now they had one of the leading colleges of Europe, and they had students from Wales and England and far-off India. (Applause) He congratulated their President on the position he had attained in connection with the National University.

Mr. M. HEDLEY, in supporting the vote of thanks, said several of the Irishmen whom Dr. Theiler had met in South Africa had been members of the staff over which he (Mr. Hedley) had the honour to preside.

Prof. CARROLL also supported the vote of thanks, and proposed that Dr. Theiler's address be printed and circulated. He said that the work of exterminating pleuro-pneumonia had been commenced in Ireland. The disease came into this country from Holland in 1841. Somewhere about 1881, forty years afterwards, the Glasnevin institution, with Mr. Hedley, Col. Steele, and Mr. Ferguson, one of the ablest veterinary surgeons of his time, took up its investigation, and proved that there was nothing for its extermination but the slaughter of the animal.

Sir CHRISTOPHER NIXON, in putting the vote of thanks, and the proposal for the printing of the address, said that physicians dealt with only one domesticated animal—man, while the veterinary surgeon dealt with the diseases of myriads of animals. They would have no difficulty in realising that there was a great opening before them in connection with veterinary medicine. There were a number of medical practitioners in England, Wales, and Scotland, and some in Ireland, who were barely able to get a pittance to maintain life. But in the Colonies there was a great field of work in the veterinary profession—a profession quite as noble as that which dealt with human medicine.

The vote of thanks and Prof. Carroll's proposal were adopted unanimously.—*The Freeman's Journal.*

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Oct. 26.

TERRITORIAL FORCE. UNATTACHED LIST.

Henry Joseph Ashcroft Bradbury to be Vet.-Lieut. Dated Oct. 2, 1909.

OBITUARY.

THOMAS KING, M.R.C.V.S., Kidderminster.
Graduated, Edin: April, 1883.

Mr. King's death occurred at Bromsgrove on Friday, Oct. 15, at the age of 54.

Prof. Otto Bollinger, Munich.

We regret to announce the death, after a short illness, of Prof. Otto Bollinger, Rector Magnificus of the University of Munich, and Director of its Pathological Institute. Prof. Bollinger was the son of a Protestant minister, and was born in 1843. Qualifying as a medical man in Munich, he very early in his career became keenly interested in comparative pathology: and, while still a young man, his studies in Berlin and Vienna resulted in the production of his classic work "Colic of Horses and Worm-Aneurism of the Intestinal Arteries." Its conclusions were warmly disputed at the time by Gerlach and others, but it is now fully recognised that Bollinger established an important truth in equine pathology which previously had merely been suspected.

Afterwards, in 1874, Bollinger became attached to the then existing Veterinary School at Munich as Professor of Pathological Anatomy, Physiology, and Histology; and, in 1880, he succeeded Buhls in the Chair of Pathological Anatomy at the Munich University. Throughout his career, he remained an ardent student of comparative pathology, publishing many valuable contributions to the science in Continental journals. Fully appreciating the intimate connection between human and animal disease, he did much to foster the study of the latter in relation to the former, and no small part of the import-

ant *rôle* which the veterinary profession now fulfils in Continental sanitary science, is due to the influence of Bollinger. By his death veterinary and medical science alike have lost a worker than whom there were few more distinguished, and none more earnest.

Veterinary Societies—Addresses.

Alterations for this list must be duly notified by the Secretaries

BORDER COUNTIES V.M.S.
Pres: Mr. J. W. Hewson, M.R.C.V.S., Wigton
Hon. Sec. (pro tem.): Mr. F. W. Garnett, M.R.C.V.S., Dalegarth, Windermere
Meetings, Second Friday of Feb., June, and October

CAPE OF GOOD HOPE V.M.S.
Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. J. W. Crowhurst

CENTRAL V.S.
Pres. Mr. T. Salusbury Price, M.R.C.V.S., Essex Lodge, Brixton Hill, S.W.
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S., 122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m

CENTRAL CANADA V.A.
Hon. Sec: Mr. A. E, James, Ottawa

CENTRAL V.A. OF IRELAND.
Pres: Mr. P. J. Howard, M.R.C.V.S., Ennis
Hon. Sec. Mr. M. J. Cleary, M.R.C.V.S., Streamstown, Moate
Treas: Mr. J. F. Healey. M.R.C.V.S., Midleton

EASTERN COUNTIES V.M.A.
Pres: Mr. H. P. Standley, M.R.C.V.S., Norwich
Hon. Sec. & Treas: Mr. James Robertson, M.R.C.V.S. Leo House, Stalham
Meetings, Second Tuesday, Feb. and July

GLASGOW V.M.S.
Pres. Principal McCall.
Hon. Sec. Mr. James Lowther

VET. MED. ASSN. OF IRELAND.
Pres: Mr. J. Holland, M.R.C.V.S., Athy
Hon. Sec: Mr. W. H. Wilkinson, M.R.C.V.S., 171 Great Britain-street, Dublin
Hon. Treas: Mr. M. Hedley, F.R.C.V.S., 6 Royal Terrace West, Kingstown

LANCASHIRE V.M.A.
Pres: Mr. A. Munro, M.R.C.V.S., Altrincham
Hon. Sec.: Mr. G. H. Locke, M.R.C.V.S. Grosvenor-street, Manchester
Meetings, 1st Thursday in April, June, Sept., & Dec.

LINCOLNSHIRE V.M.S.
Pres. Mr. G. Lockwood, M.R.C.V.S., Peterborough
Hon. Sec: & *Treas*: Mr. R. F. Bett, M.R.C.V.S., Midland Railway, Derby
Meetings, Second Thursday Feb., June, and October

LIVERPOOL UNIVERSITY V.M.S.
Pres: Mr. J. B. Wolstenholme, F.R.C.V.S., 102 Quay-street, Manchester
Hon. Secs: Prof. H. E. Annett, The University, Arnold Richardson, M.R.C.V.S., 111 Arundel Avenue, Liverpool
Meetings, May, July, October, January.

VET. ASSN. OF MANITOBA.
Pres: Mr. J. Welch, Roland
Hon. Sec. & Treas: Mr. F. Torrance, Winnipeg

MIDLAND COUNTIES V.M.A.
Pres: Mr. Trevor Spencer, M.R.C.V.S., Montague House, Kettering
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S., Camden House, High-st., West Bromwich
Meetings, Second Tuesday, Wednesday, Thursday, and Friday alternately in Feb., May, Aug. and Nov.

NATIONAL VET. ASSOCIATION.
Pres: Prof. James Macqueen, F.R.C.V.S. London, N.W.
Sec: Mr. William Hunting, F.R.C.V.S. London, S.W.
Treas: Mr. J. F. Simpson, F.R.C.V.S., Maidenhead.

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.
Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S., Quay-street, Manchester
Hon. Sec: Mr. Sam. Locke, M.R.C.V.S. Grosvenor Street, Oxford-st., Manchester

NORTH OF ENGLAND V.M.A.
Pres: Mr. H. S. Elphick, M.R.C.V.S., 56 Eldon st., Newcastle-on-Tyne
Hon. Sec: Mr. E. R. Gibson, M.R.C.V.S. 25 Marlborough-street, Seaham Harbour
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH OF IRELAND V.M.A.
Pres: Mr. J. Gregg, M.R.C.V.S., Belfast
Hon. Sec; Mr. J. S. A. Jordan, M.R.C.V.S., Belfast
Hon. Treas; Mr. J. A. Thompson, F.R.C.V.S., Lurgan

NORTH OF SCOTLAND V.M.S.
Pres: Mr. W. Skinner, M.R.C.V.S., Old Meldrum
Hon. Sec. & Treas: Mr. Geo. Howie, M.R.C.V.S., Alford, Aberdeen
Meetings, Last Saturday in January and August

NORTH WALES V.M.A.
Pres:
Hon. Sec. & Treas. T. C. Howatson, M.R.C.V.S., St. Asaph
Meetings, First Tuesday, March and September

ONTARIO V.A.
Pres: Mr. J. H. Tennent, V.S., London, Ontario
Sec: & *Treas*: Mr. C. H. Sweetapple, V.S., Toronto, Ontario

PROVINCE OF QUEBEC V.M.A.
Hon. Sec: Mr. Gustave Boyer, Rigand, P.Q.

ROYAL COUNTIES V.M.A.
Pres: Mr. E. L. Stroud, F.R.C.V.S., Spring-st, Paddington, W.
Hon. Sec. & Treas: Mr. Percy J. Simpson, F.R.C.V.S., Kendrick House, Maidenhead
Meetings, Last Friday, Jan., April, July and Nov.

ROYAL SCOTTISH V.S.
Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.
Hon. Sec:

ROYAL VETERINARY COLLEGE M.A.
Pres: Dr. Lander, D.Sc.
Hon. Sec: Mr. A. L. Sheather, M.R.C.V.S.
Assist. H.S. Mr. V. Pride Jones.

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. O. Charnock Bradley, M.D., D.SC., M.R.C.V.S., Royal Dick Vet. College
Hon. Sec: Mr. A. Gofton, M.R.C.V.S., Ryl. Dick Vet. Coll.

SOUTHERN COUNTIES V.S.
Pres: Mr. H. Smith, M.R.C.V.S., Worthing
Hon. Sec: Mr. J. Alex. Todd, M.R.C.V.S., Worthing
Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne
Meetings, Last Thursday, Mar., June and Sept.

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres.: Mr. P. Snaith, M.R.C.V.S., Bishop Auckland.
Hon. Sec: Mr. W. Awde, F.R.C.V.S., Stockton-on-Tees.
Meetings, First Friday, Mar., June, Sept. and Dec.

TRANSVAAL V.M.A.
Pres: Mr. J. K. Pilkington, M.R.C.V.S., Johannesburg
Hon. Treas; Mr. J. M. Christy, M.R.C.V.S., D.V.S. Krugersdorp
Hon. Sec: Mr. J. G. Bush, M.R.C.V.S., Piet Retief, Transvaal

WESTERN COUNTIES V.M.A.
Pres: Mr. E. W. Bovett, M.R.C.V.S., Bridgwater
Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November

WEST OF SCOTLAND V.M.A.
Pres: Mr. Hugh Begg, M.R.C.V.S., East Kilbride
Hon. Sec: & *Treasr*: Jas. Macfarlane, M.R.C.V.S., 75 West Nile Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January.

YORKSHIRE VET. ASSOCIATION
Pres: Mr. H. G. Bowes, F.R.C.V.S., 106 Clarendon-rd, Leeds
Hon. Sec; Mr. J. Clarkson, M.R.C.V.S., Garforth, nr. Leeds
Hon. Treas: Mr. A. McCarmick, M.R.C.V.S., Kirkstall-road, Leeds